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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,503	02/21/2001	Hideki Tanaka	00N033-US	6750

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EXAMINER

NGUYEN, KHIEM D

ART UNIT . PAPER NUMBER

2823

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/788,503

Applicant(s)

TANAKA, HIDEKI

Examiner

Khiem D Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

The non-final rejection as set forth in paper No. (9) is withdrawn in response to applicants' amendments.

A new rejection is made as set forth in this Office Action.

Claims (1-11 and 13-29) are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Currently amended claim 6 recites the limitation "said rib" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 13-20, 22, 23, 25, 28, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Muramatsu (JP 05-323355).

In re claims 1, 10, 11, 13, 20, and 25, Muramatsu discloses a tape carrier type semiconductor device comprising (See FIGS. 1-10 and related text): a flexible substrate on whose surface wiring is formed; and a driver circuit (FIG. 2, 2) which is mounted on the flexible substrate (FIG. 5, 8) and drives a device connected to the flexible substrate, wherein the flexible substrate includes a first slit (FIG. 4, 5) comprises a stress-releasing slit having a connector (FIG. 4, 6) situated intermediate thereto for connecting both sides

of the first slit to reduce warpage, and wherein the first slit comprises a first sub-slit and a second sub-slit with the connector therebetween (FIG. 4).

In re claims 2 and 14, Muramatsu discloses wherein the first slit includes a plurality of connectors (FIGS. 3-5).

In re claims 3 and 15, Muramatsu discloses wherein parts of the slit, which are separated from each other at the connector, are diverged from each other at the connector in a direction perpendicular to the slit (FIGS. 4-5).

In re claim 4, Muramatsu discloses wherein the flexible substrate includes a plurality of first slits (FIGS. 4-5).

In re claims 5 and 16, Muramatsu discloses wherein the flexible substrate includes a second slit for folding the tape carrier type semiconductor device (FIG. 5).

In re claims 6, 8, 17, 25, and 28, Muramatsu discloses wherein the flexible substrate includes a rib (FIG. 5, 1) comprises a reinforcement rib which is formed substantially perpendicular to the plurality of first slits.

In re claims 7, 9, 11, and 18, Muramatsu discloses a portion of the flexible substrate is changed in shape, thereby to form the rib (FIG. 5).

In re claim 19, Muramatsu discloses wherein the connector comprises a bridge (FIG. 4, 6) arranged at the center of the first slit (FIG. 4, 5).

In re claim 22, Muramatsu discloses wherein the flexible substrate comprises a terminal area adjacent the first slit (FIGS. 5-10).

Art Unit: 2823

In re claim 23, Muramatsu discloses wherein the first slit is situated between the driver circuit and the terminal area, and wherein the first slit comprises a rectangular shape with a longitudinal side parallel to the terminal area (FIGS. 5-10).

In re claim 29, the rib having a concave or convex shape is depended on how much stress applied on the rib and also in which direction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu (JP 05-323355) as applied to claims 1-11, 13-20, 22, 23, 25, 28, and 29 above, and further in view of Toyosawa et al. (U.S. Pub. 2002/0033524).

In re claim 21, Toyosawa discloses wherein the flexible substrate (FIG. 1(b), 22) comprises at least one of a polyimide resin film (page 8, paragraphs [0112]-[0119]).

In re claim 26, Toyosawa discloses wherein the flexible substrate comprises a resin (FIG. 1(b), 34) on a first side of the flexible substrate, the resin including a first heat expansion coefficient.

In re claim 27, Toyosawa discloses wherein the flexible substrate comprises a solder resist (FIG. 1(b), 31) on a second side of the flexible substrate, the solder resist including a second heat expansion coefficient.

Art Unit: 2823

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Muramatsu and Toyosawa to provide a flex TCP semiconductor device with high manufacturing yield (Abstract).

In re claim 24, there is no evidence indicating the warpage percentage of the tape carrier type semiconductor substrate device is critical and it has been held that it is not inventive to discover the optimum or workable percentage of a result-effective variable within given prior art conditions by routine experimentation. See MPEP §2144.05. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (703) 306-0210. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9179 for regular communications and (703) 746-9179 for After Final communications.

Art Unit: 2823

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.

September 3, 2003



Oik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800